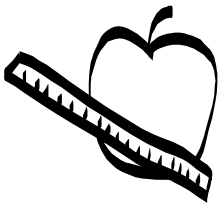


Which Would You Choose?

Grade Four

OBJECTIVES

In small groups, students will locate key data relating to the two types of water vessels used by Lewis and Clark. Students will interpret data and assess which vessel was the most efficient one that Lewis and Clark could have used in their exploration of the Louisiana Territory.

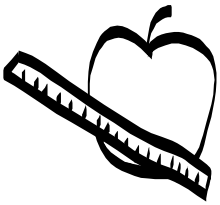
CLASS TIME

Five 45- to 60-minute sessions

NATIONAL STANDARDS

This lesson plan reflects some of the national standards of learning as defined by the National Council for the Social Studies (NCSS), the National Council for Teachers of English (NCTE), the National Council of Teachers of Mathematics (NCTM), the National Research Council, and the International Society for Technology in Education (ISTE). These standards are listed below:

- Social Studies: Time, Continuity, and Change
- Social Studies: People, Places, and Environments
- Social Studies: Production, Distribution, and Consumption
- Social Studies: Science, Technology, and Society
- Language Arts: Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
- Language Arts: Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).
- Language Arts: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
- Language Arts: Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.
- Language Arts: Students use a variety of technological and information resources



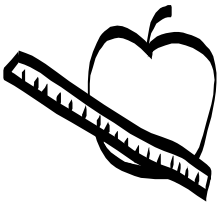
Which Would You Choose?

(e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

- Math: Measurement
- Science: Unifying Concepts and Processes in Science
- Science: Science as Inquiry
- Science: Science and Technology
- Technology: Basic Operations and Concepts
- Technology: Technology Research Tools

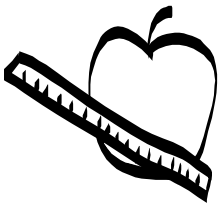
MATERIALS

- 1 overhead projector
- 1 overhead transparency of each of the following:
  - pre-2004 Monticello nickel obverse from the Resource Guide
  - pre-2004 Monticello nickel reverse from the Resource Guide
  - "North America in the 1800s" map
  - Keelboat Nickel obverse from the Resource Guide
- 1 copy of an age-appropriate text that provides basic historical information about the Lewis and Clark expedition, such as:
  - *Meriwether Lewis and William Clark: Soldiers, Explorers, and Partners in History* by David Peterson and Mark Coburn, Ch. 3
  - *World History Series: The Lewis and Clark Expedition* by Eleanor J. Hall
  - *The Incredible Journey of Lewis and Clark* by Rhoda Blumberg
  - *On the Trail of Lewis and Clark: A Journey Up the Missouri River* by Peter Lourie
  - *A Picture Book of Lewis and Clark* by David A. Adler
  - *Lewis and Clark: Explorers of the American West* by Steven Kroll
  - *How We Crossed the West: The Adventures of Lewis and Clark* by Rosalyn Schanzer
- Chart paper
- Markers
- Copies of each of the following:
  - "Expedition Information" worksheet
  - "Plus/Minus" chart
  - "Canoe/Pirogue Data Sheet" (optional)
  - "Keelboat Data Sheet" (optional)



Which Would You Choose?

- 1 overhead transparency marker (optional)
- A reserved computer lab with Internet access
- Web sites that include basic information about the rivers and boats used by Lewis and Clark, such as:
  - www.lewis-clark.org/boat1.htm
  - www.lewis-clark.org/boat2.htm
  - www.lewis-clark.org/boat3.htm
  - www.lewis-clark.org/boat4.htm
  - www.lewis-clark.org/boat5.htm
  - www.lewisandclark.net/boats.htm
  - www.lewis-clark.org/FTCCOLUMBIA/bo_keelb.htm
  - www.army.mil/cmh-pg/LC/The%20Mission/KeelboatPhotos/keelboat_photos.htm
  - www.lib.fit.edu/pubs/librarydisplays/L&C%20Brochure1.pdf
  - www.lib.fit.edu/pubs/librarydisplays/lewis%20and%20clark%20display%20website.htm
  - www.lewisandclark.org/?p=exp_history&n=landcexp
  - www.nps.gov/jeff/LewisClark2/CorpsOfDiscovery/CorpsOfDiscoveryMain.htm
  - www.nps.gov/jeff/LewisClark2/TheJourney/TheJourneyMain.htm
  - www.cr.nps.gov/nr/travel/lewisandclark/preparing.htm
  - www.esu3.org/nebraska/nhm/clark.html
  - aa179.cr.usgs.gov/basin/dynamap.html
  - www.conservation.state.mo.us/conmag/2004/01/20.htm
- Web sites that include basic information about the Lewis and Clark Expedition, such as:
  - www.lewisandclark.net/the.htm
  - www.lewisandclarkeast.org/who_are_we.html
  - www.lewis-clark.org/
  - www.ngeo.com/lewisandclark/movie.html
- Copies of appropriate print resources that provide accurate information about the details of Lewis and Clark's journey and transportation vessels, such as encyclopedias, reference books, magazines, and the Lewis and Clark journals.
- Rulers
- Sticky notes and/or masking tape



Which Would You Choose?

PREPARATIONS

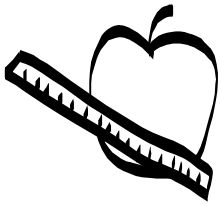
- Make an overhead transparency of each of the following:
  - pre-2004 Monticello nickel obverse from the Resource Guide.
  - pre-2004 Monticello nickel reverse from the Resource Guide.
  - "Louisiana Territory" map from the Resource Guide.
  - Keelboat Nickel obverse from the Resource Guide
- Locate an appropriate text that provides basic historical information about the Lewis and Clark Expedition (see examples under "Materials").
- Make copies of each of the following:
  - "Expedition Information" worksheet (1 per group).
  - "Plus/Minus" chart (1 per group).
  - "Canoe/Pirogue Data Sheet" (1 per student, optional).
  - "Keelboat Data Sheet" (1 per student, optional).
- Arrange to use the school computer lab for three class sessions.
- Bookmark appropriate Internet sites.
- Locate copies of appropriate print resources that provide accurate information about the details of Lewis and Clark's journey and transportation vessels (see examples under "Materials").

GROUPINGS

- Whole group
- Small groups
- Independent work

TERMS AND CONCEPTS

Obverse (front)	President Thomas Jefferson	Reverse (back)
Nickel	Lewis and Clark	Keelboat
Louisiana PurchaseDraft	Pirogue	Canoe
Corps of Discovery	Capacity	

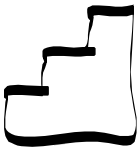


Which Would You Choose?

BACKGROUND KNOWLEDGE

Students should have a basic knowledge of:

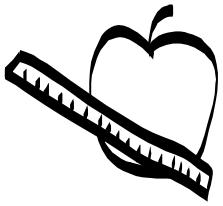
- Working in cooperative groups
- Independent research
- Internet Research Skills
- Measurement



STEPS

Session 1

1. Display the overhead transparency of the pre-2004 Monticello nickel obverse. Ask students to examine this image and tell you what they know about it. The students should be able to identify this as the obverse (front) of a nickel and to explain that it depicts President Thomas Jefferson.
2. Ask the students if they know what is on the reverse (back) of the nickel. After hearing responses, display the overhead transparency of the pre-2004 Monticello nickel reverse. If students do not know, explain that the building was President Jefferson's home, called "Monticello."
3. Explain that, starting in 2004 and continuing through 2005, our country is changing its nickels to tell the story of two men, named Lewis and Clark, who led an expedition that explored our country's land 200 years ago.
4. Introduce the students to the selected text. As a group, preview the text and illustrations to generate predictions about what is occurring in different parts of the book.
5. Read the selected text aloud to the class. Ask students to pay careful attention to any part of the text that describes the purpose of Lewis and Clark's exploration. Do not read aloud any references to the keelboat.
6. Direct the students to list the purposes of the Expedition on chart paper. Guide the students to respond that the missions of the Expedition were to find and map a Northwest Passage to the Pacific Ocean, to observe and record information about the plants, animals, and peoples that were encountered, and to form relationships with the American Indian tribes they met along the way.
7. Group the class into 4 or 5 small groups.
8. Distribute one "Expedition Information" worksheet to each group. Have one student in each group record the purposes of the mission in the "Purpose" box on this sheet.
9. Display the "North America in the 1800s" map overhead transparency. Follow Lewis and Clark's route with your finger or an overhead marker, and point out that the explorers traveled over both land and water.



Which Would You Choose?

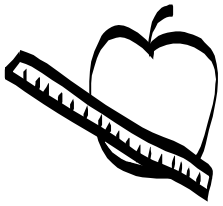
10. Ask the students to brainstorm about different modes of transportation that Lewis and Clark might have used during their journey.
11. Inform the students that they will be researching different boats in the following session and eventually determining which boat would be the best choice for Lewis and Clark's expedition.

Session 2

1. Display the "North America in the 1800s" map overhead transparency and point out the Missouri River. Explain that the groups will be researching this river in order to make an informed decision about which kind of boat would have been able to best navigate the Missouri River at the beginning of Lewis and Clark's expedition.
2. Review the "Expedition Information" worksheet with the class. Have groups read the questions in their "Missouri River" box and assign research tasks to each member.
3. Visit the computer lab with your students or provide significant print resources such as books, magazines, encyclopedias, and the Lewis and Clark journals.
4. Allow 30 minutes for group research.
5. Direct the groups to assemble and record their findings in the "Missouri River" box on the "Expedition Information" worksheet.
6. At the end of class, have groups come up with a specific description of a boat that would be able to navigate the Missouri river. Have each group share and discuss its description.

Session 3

1. Explain to students that, now that they have more information on the Missouri River, they will be looking at the two different types of boats that may have navigated the river (pirogues/canoes and keelboats) in order to decide which one would have been the best choice for the first part of the journey.
2. Direct the groups to read the questions in the "Keelboat Dimensions" and "Canoe/Pirogue Dimensions" boxes on their "Expedition Information" worksheets and assign research tasks to each member.
3. Visit the computer lab with your students or provide significant print resources such as books, magazines, encyclopedias, and the Lewis and Clark journals.
4. Allow 30 minutes of group research.
5. Direct the groups to assemble and record their findings for each boat in the corresponding boxes on the "Expedition Information" worksheet.
6. Lead the class into the hallway or another large area where they can mark off the



Which Would You Choose?

dimensions of each boat on the wall or floor using sticky notes or masking tape. If necessary, supply the students with the boat dimensions from the "Canoe/Pirogue" and "Keelboat" data sheets.

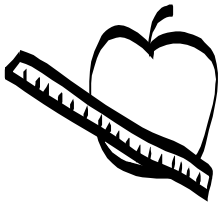
7. When the students have finished marking off the area of each boat, have the whole class stand in each area. Direct students to visualize and discuss how large each vessel was and estimate how many people and how much cargo each might hold.
8. Return to the classroom and direct groups to write about which boat they would select for the first part of the Expedition in the "Journal" box on the "Expedition Information" worksheet.

Session 4

1. Explain that the groups' mission in this session is to find information on the number and type of people that were on the Expedition and the amount of supplies that were brought.
2. Direct the groups to read the questions in the "Crew" and "Supplies" boxes and assign research tasks to each member. If necessary, use the 2004 Peace Medal Nickel lesson plan for Grade 3, "Take It or Leave It."
3. Visit the computer lab with your class or provide significant print resources such as books, magazines, Encyclopedias, and the Lewis and Clark journals.
4. Allow 30 minutes for group research.
5. Direct the groups to assemble and record their findings in the corresponding boxes on the "Expedition Information" worksheet.
6. Explain to the students that they will be taking the information they researched on their "Expedition Information" worksheet and will use it to make a decision as to which type of boat was the best choice for the first part of the Expedition.
7. Distribute one "Plus/Minus" chart to each group. Have students work in their groups to weigh the pros and cons of each boat. Direct students to use the information from their group's data sheet in arguing the best boat choice.

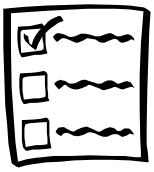
Session 5

1. Direct the groups to select the boat they feel was the best made for navigating the first part of the Missouri River. Inform groups that they will explain to the rest of the class the reasons for their decision.
2. Allow the groups 5 to 10 minutes to make their decision and jot down the reasons to support this decision.
3. Have the groups present their decisions to the rest of the class. Allow student discussion and debate as to which boat was the best choice.



Which Would You Choose?

4. Explain to the students that one of these boats was the central figure on the reverse (back) of one of the new nickels in the Westward Journey Nickel Series™. Ask the students if they know which boat that was. After hearing responses, display the transparency of the Keelboat Nickel reverse.
5. Display the overhead transparency of the Keelboat Nickel reverse and ask students to discuss the images on the coin and what they represent. Explain to the students that all three types of boats were actually used, but that the coin depicts the keelboat, which was the largest vessel on the Expedition. Supply several reasons that this boat was chosen. Include in this explanation that the keelboat offered the most protection due to its reinforcements, the most shelter due to its construction, and that it held the most cargo.



ASSESSMENT

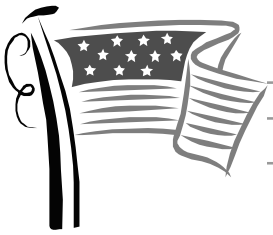
- Collect and evaluate the group "Expedition Information" worksheets and boat decisions.
- Take anecdotal notes about the students' abilities to discuss the characteristics of each boat and work in groups to come to a decision about which would be the best choice for the river.

ENRICHMENTS/EXTENSIONS

- Have students use non-standard measurements in marking the dimensions of each type of boat.
- Find other symbols that could have been used on the nickel to symbolize the journey. Give reasons for selecting other symbols.
- Research other coins related to the Lewis and Clark journey.

DIFFERENTIATED LEARNING OPTIONS

- If students have difficulty working in groups, complete activities as a whole class.
- Pair students when completing independent research.



Expedition Information

Page 1

PURPOSE

MISSOURI RIVER INFORMATION

How long is the river?

How wide is the river at different points?

How deep is the river at different points?

Is the river a slow moving or swift moving river?

KEELBOAT DIMENSIONS

How long was the boat?

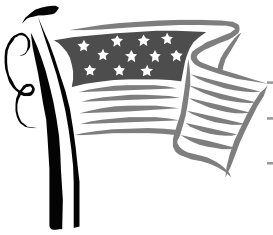
How wide was the boat?

How tall was the boat?

How many people did the boat hold?

How much did the boat weigh?

How much cargo did the boat hold?



Expedition Information

Page 2

PIROGUE DIMENSIONS

How long was the boat?

How wide was the boat?

How tall was the boat?

How many people did the boat hold?

How much did the boat weigh?

How much did the boat hold?

JOURNAL

CREW

How many people made up the crew?

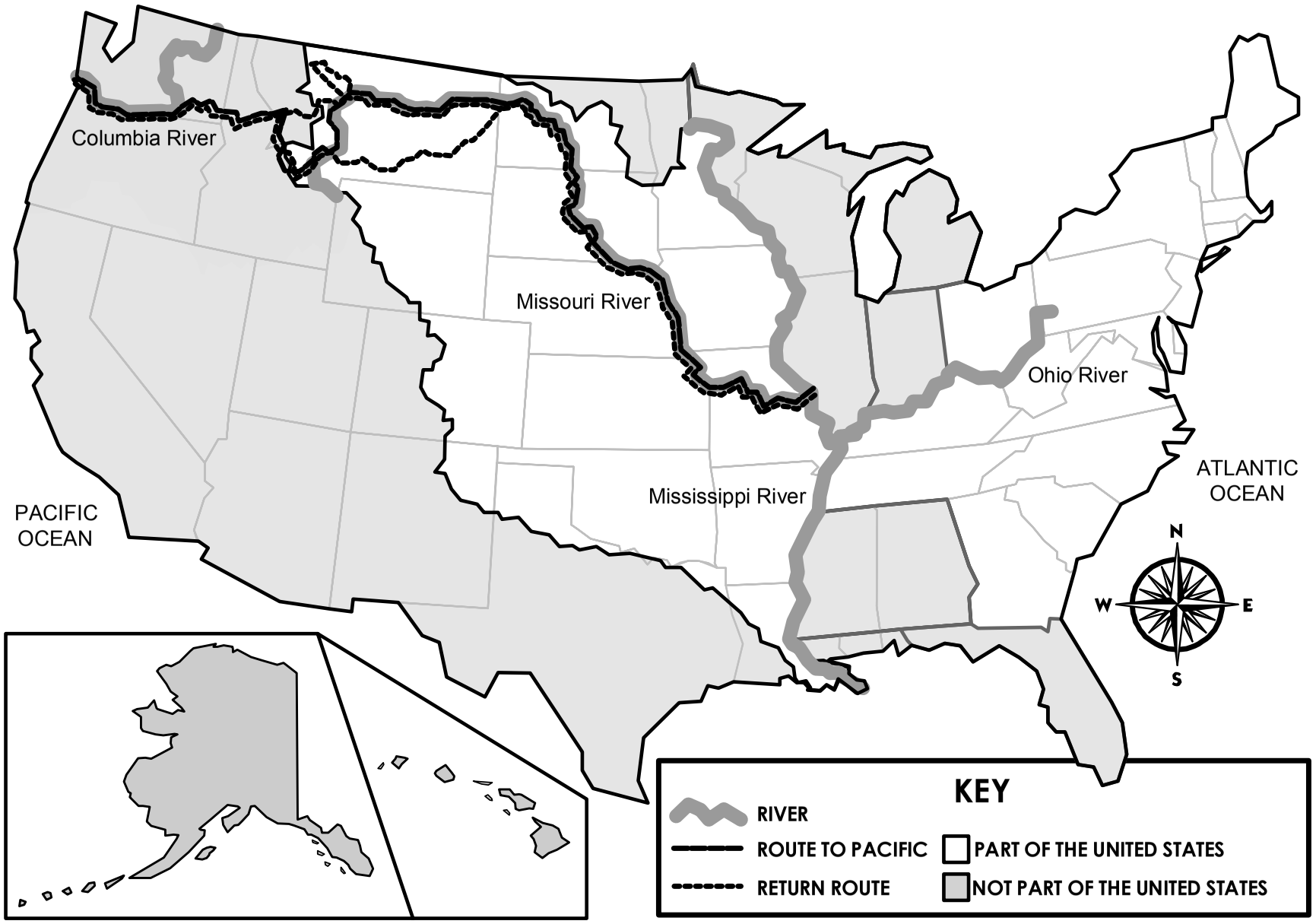
What types of people made up the crew?

SUPPLIES

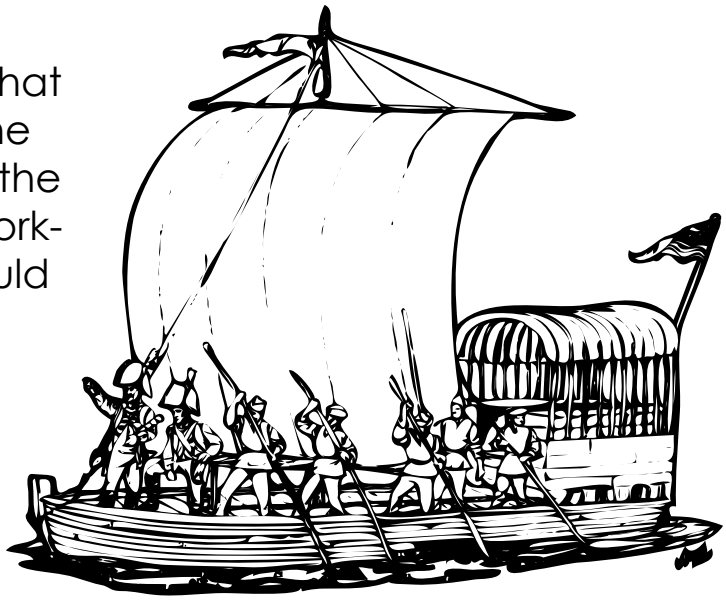
What types of supplies did they bring?

How much did all the supplies weigh?

North America in the 1800s



Keelboat Data Sheet



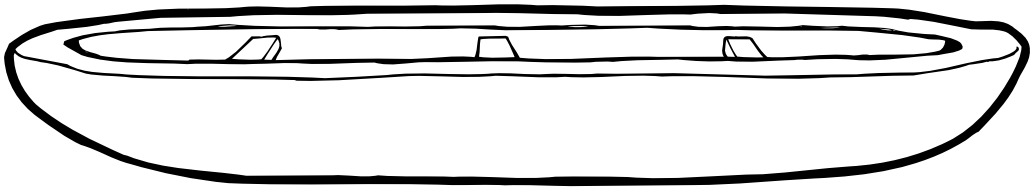
A keelboat has a keel (a ridge that protrudes down the center of the bottom) to help it go straight in the water. The keelboat was the work-horse of the rivers. This boat could be sailed, rowed, poled like a raft, or towed from outside.

Rowing with the 21 oars was the more reliable way to move the boat forward, but very hard work. When rowing was impossible, the men had to push the boat forward with long poles, or pull it with a long rope attached to the mast. The men would get on the shore or in the river itself and pull the boat upriver.

The keelboat had walkways along the sides from which men could pole. They would stand at the bow facing the stern, stick a long pole into the river bed, and push while walking toward the stern, thus moving the boat forward.

- Length: 55 feet
- Height: 130 inches
- Width: 8 feet 6 inches
- Empty Weight: 7 tons
- Draft: 20 inches
- Mast: 32 feet high
- Capacity: 12 to 14 tons of supplies, equipment, and crew

Canoe/Pirogue Data Sheet



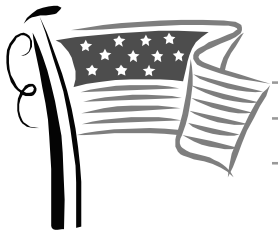
CANOE FACTS

- Length: 14 to 18 feet
- Height: 12 to 16 inches
- Width: 32 inches
- Empty Weight: 50 pounds
- Draft: 6 inches
- Capacity: 400 pounds

PIROGUE FACTS

The Pirogue is a large dugout canoe made from one log. These flat-bottomed hulls have a shallow draft and a small beam, and can be easily poled or paddled with paddles. The Pirogue will slip into shallow areas that are difficult to get through.

- Length: 39 to 41 feet
- Height: 50 inches
- Width: 9 feet
- Empty weight: 3 tons
- Draft: 8 to 12 inches
- Capacity: 9 tons



Plus/Minus Chart

Option	Plus (+)	Minus (–)
KEELBOAT		
PIROGUE OR CANOE		